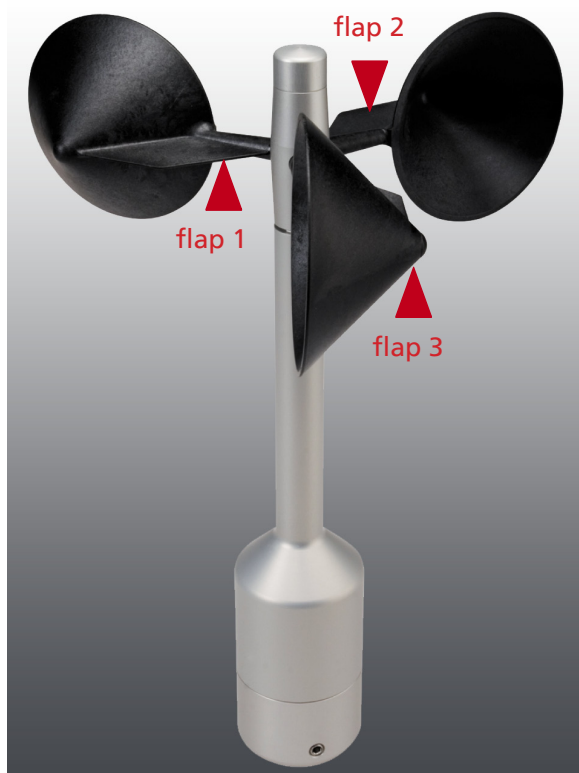


## Anemometer: Thies First Class Advanced

Accredited according to: IEC 61400-12-1 (2005-12), **CLASS S 0.5**  
MEASNET, ISO 17713-1



Anemometer Thies First Class Advanced:  
The application of flaps at the cup-stem improves its performance ratings even further.

### Classification:

IEC 61400-12-1 (2005-12)  
Class A Classification Index A 0.9  
Class B Classification Index B 3.0  
**Class S Classification Index S 0.5**

### Linearity (Measnet):

**$r > 0.999\ 99$  (4...20 m/s)**

### Optically Scanned Cup Anemometer:

The new Anemometer Thies First Class Advanced is outstanding in its performance, as it is the only Anemometer on the market complying with all requirements, according to IEC 61400-12-1 (2005-12), Class S 0.5. It has even improved performance ratings compared to the previous Thies Anemometer First Class, which had been rated as the best of its kind according to the CLASSCUP/ACCUWIND Study.

It offers optimised, dynamic performances at:

- ▶ Low Power Instruments
- ▶ Digital Output
- ▶ High Turbulence-Intensity
- ▶ High Accuracy
- ▶ Minimum Overspeeding
- ▶ Small Distance Constant
- ▶ Low Start Up Value

Measurement of power curves and site assessment reports are the main tasks for this instrument. The patented design is the result of long experiences.

The Anemometer is designed for the acquisition of the horizontal component of the wind velocity in the field of meteorology and environmental measuring technology, site assessment, and measurement of capacity characteristics of wind power systems (power curves).

Special features are a defined and optimised, dynamic behaviour also at high turbulence intensity, minimal over-speeding, and a low starting value. The measuring value is available at the output as a digital signal. It can be transmitted to display instruments, recording instruments, data loggers as well as to process control systems.

For winter operation the instrument provides electronically regulated heating, which guarantees a smooth running of the ball bearings, and prevents the shaft and slot from icing.

## Anemometer: Thies First Class Advanced

Accredited according to: **IEC 61400-12-1 (2005-12), CLASS S 0.5**  
**MEASNET, ISO 17713-1**

### Optically Scanned Cup Anemometer - Specification:

Measuring Range	0.3...75 m/s
Measurement Uncertainty	0.3...50 m/s, 1% of meas. value or < 0.2 m/s
Survival Speed	80 m/s (min. 30 minutes)
Permissible Ambient Condit.	- 50...+ 80°C, all occurring situations of relative humidity
Output Signal:	Form rectangle, 1082 Hz @ 50m/s , supply volt., max. 15V
Linearity	Correlation factor r between frequency and wind speed $y = 0.0462 * f + 0.21$ typical $r > 0.99999$ (4...20 m/s)
Starting Velocity	< 0.3 m/s
Resolution	0.05 m wind run
Distance Constant	< 3 m, (acc. to ASTM D 5096 – 96) 3 m acc. to ISO 17713-1
Turbulent Flow	Deviation $\Delta v$ turbulent compared with stationary horiz. flow $-0.5\% < \Delta v < +2\%$ Frequency < 2 Hz
Wind Load	Approx. 100 N @ 75 m/s
Electrical Supply for	Voltage: 3.3 - 42 V DC (galvanic isolation from housing)
Opto-electronic scanning:	current: 0.3 ma @ 3.3 V (w/o external load) < 0.5 ma @ 5 V (w/o external load)
Electrical Supply for Heating:	Voltage: 24 V AC/DC; 25 W (galvanic isolation from housing) Idling Voltage: max. 30 V AC, max. 42 V DC Capacity: 25 W regulated by temperature sensor
Connection	8-pole plug-connection for shielded cable in the shaft
Mounting	onto mast tube R 1
Fixing Boring	35 x 25 mm
Dimensions	290 x 240 mm
Protection	IP 55 (DIN 40050)
EMC	EN 61000-6-2:2001 (immunity) EN 55022:2001, Class B (interfering transmission)
Weight	0.5 kg
Finishes - Housing	Anodised Aluminium
Finishes - Cup Star	Carbon-Fibre-Reinforced Plastic
Patented	EP 1398637

### Comparison of performance of Anemometers

Cup Anemometer	Class A	Class B	
NRG max 40	2.4	7.7	Information as stated according to CLASSCUP & ACCUWIND Study (Table 4-4 horizontal wsp definition Risø-R-1563)
Risø P2546	1.9	8.0	
Vaisala WAA151	1.7	11.1	
Vector L100	1.8	4.5	
Thies First Class	1.5	2.9	
<b>Thies First Class Advanced</b>	<b>0.9</b>	<b>3.0</b>	<b>IEC 61400-12-1(2005-12) according to Deutsche WindGuard</b>